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REMARKS

Claim 1 has been amended to further clarify the inventive subject matter. Claims 1-31 are pending. Applicant would like to thank the Examiner for extending the courtesy of an interview. Applicant has incorporated ideas discussed in the interview into this response in order to further clarify the inventive subject matter. Reconsideration is respectfully requested.

Rejections Under 35 U.S.C. §112

The Examiner has rejected claims 3-4, 7-9, 17-18, and 21-23 under 35 U.S.C. §112 second paragraph as being indefinite for failing to particularly point out and distinctly claim subject matter which Applicant regards as the invention. More particularly, the Examiner states:

Claim 3 is vague and indefinite; what does the applicant mean by "heat sufficient to saturate said coating". How can heat saturate the coating. Also, what does applicant mean by "hydration of said ingredient"; if there is no water, how can the ingredient be hydrated. Hydration does not [take] place with heat.

Claim 4 is vague and indefinite; what is the difference between the first hydration and the second hydration. Also, claim 4 has the same problem as claim 3.

Claim 7 is vague and indefinite because it is not clear what is intended. The ingredient comprises both the coating and the leavening agent; thus, what does "said ingredient" refer to?

Claims 8 and 9 have the same problem as claim 7.

Claims 17-18 have the same problem as claims 3-4.

Claims 21-23 have the same problem as claim 7.

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The Examiner further states in conjunction with the §112 Rejections that clarification is requested of the disclosure on page 10. In particular, the Examiner points out that in Table 1, Sample 1 is indicated as being microporous and gives a different leach rate than those samples being indicated as having a continuous coating. The Examiner indicates that it is unclear what the difference is between the vegetable oil coating of Sample 1 and that of Samples 2-4; i.e., what does microporous mean.

Applicant points to paragraphs [0020] and [0021] of the detailed description of the invention regarding the term microporous. Specifically, Applicant has further explained that the term microporous refers to a "coating which is sufficiently impermeable to prevent migration of water thereacross at room temperature, yet is sufficiently permeable to allow hydration of an encapsulated agent with the introduction of energy, usually in the form of heat."

Furthermore, in paragraph [0021] Applicant structurally defines the microporous lipid coating as a coating of non-uniform size and width parameters which possesses reticulated passages which are believed to allow the retention of water within the microporous structure while preventing contact with the encapsulated substrate. A continuous coating, on the other hand, does not possess these reticulated passages as a microporous coating would.

Still further, the American Heritage College Dictionary defines porous as:

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1. Full of or having pores. 2. Admitting the passage of gas or liquid through pores or interstices. 3. Easily crossed or penetrated. (The American Heritage College Dictionary, Third Edition ©1997, Houghton Mifflin Company).

The prefix micro is commonly known as a prefix indicating abnormally small, or on a smaller scale than usually expected. It should therefore be clear to the Examiner what the Applicant means by microporous, i.e., full of or having pores which are abnormally small. The definition of the term is further clarified by the Applicant in paragraphs [0020] and [0021] as structurally defining the term with miniature reticulated passages in the coating.

In view of the extensive description of the term "microporous" in the specification, as well as the unambiguous nature of the term absent the description, Applicant believes that the term is definite and accurately describes the metes and bounds of the invention as required by 35 U.S.C. §112.

The Examiner also states on page 2, paragraph 1 of the Office Action that it is unclear what "continuous" means. Applicant does not define the term "continuous" as it is not part of the present invention. The term continuous is used in the specification. Its plain meaning is used to describe prior art coatings, i.e., those which do not possess reticulated passages. The term is specifically used to draw a contrast with prior art coatings and the coatings of the present

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invention. A continuous coating does not possess reticulated passages as the microporous coating of the present invention does.

The Examiner has rejected claim 3 (and 17) as being vague and indefinite as it is unclear to the Examiner what the terms "heat sufficient to saturate said coating" and "hydration of said ingredient" mean. Applicant again refers to the specification. With further reference to the reticulated passages of the microporous coating, Applicant indicates in paragraphs [0021] and [0022] of the specification that with the addition of an appropriate amount of heat, the coating allows retention of water within the reticulated passages of the microporous coating. This first temperature of hydration is therefore used to indicate at what temperature the reticulated passages allow saturation. The rejection is respectfully traversed.

The Examiner has further rejected claim 4 (and claim 18) as being vague and indefinite. The Examiner states that it is unclear what is the difference between the first hydration and the second hydration. Applicant points to paragraph [0022] of the specification. The first and second heat hydration temperatures are defined as follows:

It may also be said that the ingredient of the present invention has a first temperature of hydration which allows saturation of the reticulated passages within the microporous coating. The ingredient has a second temperature of hydration which further melts the coating and allows contact between the leavening agent

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and the rest of the bread dough, thereby allowing contact of acid and base and leavening of the dough.

The second temperature of hydration therefore signifies the melting point of the coating when the leavening agent is exposed as the coating has melted. The rejection is traversed. Reconsideration is respectfully requested.

The Examiner has further rejected claim 7 (and 8-9, and 21-22) as being vague and indefinite because it is not clear what is intended by said ingredient. Applicant believes that it is evident that Applicant is referring to an ingredient wherein the ingredient is comprised of both a coating and a leavening agent. The coating comprises at least about 25% of the total ingredient by weight, i.e., that the ingredient is formed of at least about 25% coating. The rejection is respectfully traversed.

Rejections under 35 U.S.C. §102

The Examiner has rejected claims 1-11, 13-25, 27-28 and 31 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,792,456 to Katz et al. (hereinafter "Katz"). More particularly, the Examiner states:

Katz et al disclose a leavening system comprising of gluconodelta-lactone and sodium bicarbonate. One of the components is coated with a partially hydrogenated vegetable oil. The acid can be coated or the sodium bicarbonate can be coated. The preferred encapsulated gluconodelta-lactone comprises by weight 48-72% glucono-delta-lactone

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coated with 28-52% partially hydrogenated vegetable oil. The leavening system is used in bread dough. (See col. 3, lines 1-25 and example 3).

Katz et al disclose coating leavening ingredient with hydrogenated vegetable oil which is the same coating material as claimed; thus, it is inherent the Katz et al composition has the properties as claimed.

The rejection is respectfully traversed.

Katz et al discloses a lipid coating typical in the prior art which was referred to Applicant and upon which the present invention improves. More particularly, Katz discloses a continuous coating coated by fluid bed techniques. See paragraphs [0004]-[0006] of the background of the invention.

The present invention, on the other hand, provides a leavening agent with a microporous lipid coating. There is no such microporous lipid coating in Katz et al. The clarifying comments with regard to the §112 rejections should make the distinction between the microporous coating and the prior art clear to the Examiner.

Applicant again points to paragraph [0021] where Applicant structurally defines microporous lipid coating as a coating of non-uniform size and width parameters which possess reticulated passages which are believed to allow the retention of water within the microporous structure while preventing contact with the encapsulated substrate.

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Applicant has further clarified and distinguished the ingredient of the present invention over the prior art. In order to further distinguish the microporous lipid coating of the present invention, Applicant has amended the claims to include the increased leach rate which is a by-product of the coating.

As indicated in the specification, a high leach rate typically indicates that the coating is not effective to prevent premature release of the active ingredient. It has been surprisingly found however in the present invention that the ingredient may possess a high leach rate yet still provide an effective time-release ingredient. This is particularly made apparent in Table 1 where leach rates of the ingredients were taken on four different samples and used in dual compositions.

There is no microporous lipid coating in Katz. Katz is therefore not an appropriate rejection under 35 U.S.C. §102 as Katz does not disclose each and every element of the claimed invention. The rejection is therefore respectfully traversed. Reconsideration is respectfully requested.

Rejections under 35 U.S.C. §103(a)

The Examiner has rejected claims 12, 26, and 29-30 under 35 U.S.C. §103(a) as being unpatentable over Katz et al. More specifically, the Examiner states:

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Since the agent used in Katz et al composition is leavening agent, it is expected the size is close to the one claimed. In any event, it would have been obvious to use product of varying size depending on the texture and how well one wants the ingredient to blend in with other ingredients of the dough. It is known finer agent will blend in better with the rest of the ingredients than courser one. As to the amount, the amounts leavening used varies with the type of product and the volume and texture desired. It would have been obvious to one skilled in the art to use an amount which would give the most optimum rising in texture to the specific product being made; this amount can readily be determined by one skilled in the art through routine experimentation. It would have been obvious to use the encapsulated leavening ingredient in any other product which requires leavening agent and one benefit provided by the encapsulation as desired.

The rejection is respectfully traversed.

Applicant has demonstrated that Katz is not a proper rejection under 35 U.S.C. §102 as it does not contain a microporous lipid coating as presently claimed. For the same reasons Katz fails as a §102 reference, it also fails as a reference under 35 U.S.C. §103; i.e., not only is there no disclosure of a microporous lipid coating, there is further no teaching or suggestion of a microporous lipid coating.

The difference between the microporous lipid coating and prior art coatings as disclosed in Katz can further be seen in the different leach rates and baking results as shown in Table I on page 10 of the present application. The difference in the leach rates has now been incorporated into claim 1 by amendment.

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The non-obvious results of using the microporous lipid coating with a higher leach rate and the prior art coatings of Katz are made evident in Table I. The difference in leach rates, as well as improved baking results are shown, e.g. see the different leach rates of samples 1 and 2 (sample 1 having 95% leach rate vs. sample 2 having 25% leach rate), and the improved baking result of sample 1.

The rejection is traversed. Withdrawal and reconsideration is respectfully requested.

Should the Examiner have any questions or comments concerning the above, the Examiner is respectfully invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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VERSION OF AMENDMENT WITH MARKINGS
SHOWING CHANGES MADE

IN THE CLAIMS:

1. (Amended) An ingredient for leavening bread dough comprising a chemical leavening agent encapsulated with a microporous lipid coating wherein said ingredient possesses a leach rate greater than twenty-five percent.